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10/584,005

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Peter Marten Van Der Horst

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LEGAL & IP

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EXAMINER

CORDRAY, DENNIS R

ART UNIT

PAPER NUMBER

1791

MAIL DATE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|---|--|
| Office Action Summary | Application No. 10/584,005 | Applicant(s) VAN DER HORST, PETER MARTEN | |
| | Examiner DENNIS CORDRAY | Art Unit 1791 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>9/18/06, 11/25/08</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as anticipated by Solarek et al (4675394).

Solarek et al discloses a paper containing an aldehyde-containing polysaccharide. Aldehyde-containing substituent groups include quaternary ammonium containing groups (Abs; col 2, line 56 to col 3, line 56; col 4, lines 13-33; col 7, lines 5-7; col 8, lines 18-23; col 21, lines 44-51). The paper can contain fillers (col 7, lines 48-49). The polysaccharide can be cellulose ether, such as methyl cellulose, hydroxypropylmethyl cellulose, hydroxybutylmethyl cellulose, etc. (col 5, lines 11-17). The polysaccharide can also be modified to contain other substituent groups such as carboxymethyl groups and cationic groups. The group 3-(trimethyl ammonium chloride)-2-hydroxypropyl ether is exemplified, which overlays the claimed structure (col 3, lines 56-59; col 4, lines 42-44; col 6, lines 60-64).

Claims 1, 3 and 4 are rejected under 35 U.S.C. 102(b) as anticipated by Zeuner et al (5294299) as evidenced by Aho et al (US 2004/0131854).

Zeuner et al discloses paper comprising a filler and a cationic polymeric flocculating agent having a degree of substitution (DS) of 0.01 to 0.3 (construed to be cationic substitution). The cationic polymeric flocculating agent can be carboxymethylcellulose (CMC) cationized with quaternary ammonium compounds (Abs; col 1, lines 11-15; col 2, lines 13-39; col 4, lines 39-45). The DS of CMC (carboxymethyl substituents) typically varies from approximately 0.1 to 1.2 (if evidence is needed, see Aho et al, p 2, par 31). The cationic CMC of Zeuner et al thus has the claimed cationic and anionic DS. Alternatively, if the disclosed range of DS includes both quaternary ammonium and carboxymethyl substituents, the range still embodies compounds having the claimed ranges of both substituents.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3 and 4 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Cash et al (6602994).

Claim 1: Cash et al discloses a paper composition comprising derivatized microfibrillar cellulose ether, and particularly CMC (Abs; col 4, lines 14-15 and 40-43; col 36, line 31 to col 37, line 62, Examples 25-27). In some embodiments, the derivatized microfibrillar cellulose ether also contains substituents having a cationic groups such as quaternary amine groups (col 3, lines 55-61; col 12, lines 37-42). The paper can comprise fillers (col 6, lines 9-27, particularly line 27).

Claims 3 and 4: A preferred range for the DS of groups that provide electrostatic functionality is between about 0.02 and 0.5, while the DS for anionic constituents is at least 0.05 (col 3, lines 40-53). Although the cationic DS is not explicitly stated, the disclosed ranges implicitly embody a DS for cationic constituents within the claimed range or, at least, obtaining the claimed DS for cationic substituents would have been obvious to one of ordinary skill in the art.

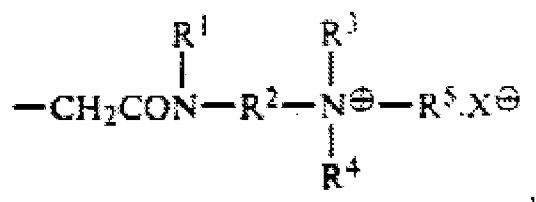
Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cash et al.

The disclosure of Cash et al is used as above. Cash et al does not disclose a paper coating. Cash et al does disclose that the derivatized microfibrillar cellulose ether is used in paper coatings to control the rheology and to provide water retention, thereby controlling the amount of liquid that permeates the base sheet (col 15, lines 5-18 and 52-57). A paper coating comprising the disclosed derivatized microfibrillar cellulose ether would thus have been obvious to one of ordinary skill in the art for the disclosed reasons.

Claims 2 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cash et al in view of Gruning et al (4988806) or Stober et al (4940785).

The disclosure of Cash et al is used as above. Cash et al does not disclose the claimed quaternary ammonium groups.

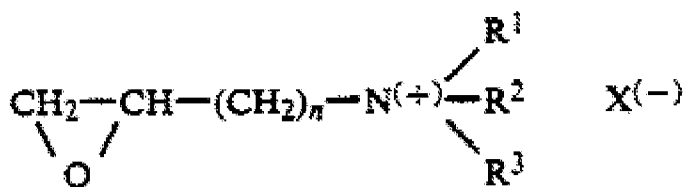
Gruning et al discloses nitrogen containing derivatives of CMC having a DS of at least 0.1 that can be added to paper pulp during the manufacture of paper (Abs; col 6, lines 65-68). In the derivatives, all or a portion of the carboxymethyl groups are replaced by quaternary ammonium groups having the general formula



where R¹ is H or methyl, R² is a C₂ to C₅ aliphatic hydrocarbon group, R³ and R⁴ are C₁ to C₄ alkyl, R⁵ is a C₁ to C₄ alkyl group or a benzyl group, and X is halogen, sulfate or sulfonic acid group (Abs; col 3, lines 7-32). The disclosed quaternary ammonium groups overlay the claimed groups or, at least, the claimed groups would have been obvious from the disclosed groups.

Stober et al discloses a method of making cellulose ethers, such as CMC, containing quaternary ammonium groups by reacting alkaline epoxides with a cellulose derivative. The alkaline epoxides have the general formula

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where $n = 1, 2$ or 3 ; R^1 , R^2 and R^3 are C_1 to C_{18} alkyl groups or R^1 is a benzyl group or C_2H_4OH ; and X is chloride, bromide, sulfate or acetate (Abs; col 2, lines 8-31 and 41-46). The disclosed quaternary ammonium groups overlay the claimed groups. The DS of quaternary ammonium containing groups is from 0.005 to 1 per hydroxy group on the CMC (col 2, lines 57-62).

The art of Cash et al, Gruning et al, Stober et al and the instant invention is analogous as pertaining to adding cationic quaternary ammonium containing groups to CMC. It would have been obvious to one of ordinary skill in the art to add quaternary ammonium groups having the claimed formula to the CMC of Cash et al in view of Gruning et al or Stober et al as well known methods of adding cationic groups to CMC.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

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A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-4, 6 and 7 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6, 8 and 15 of copending Application No. 11/149613 in view of Stober et al. Although the conflicting claims are not identical, they are not patentably distinct from each other because the copending claims embody paper containing a filler and CMC having the claimed content of quaternary ammonium groups. The claimed structures would have been obvious to one of ordinary skill in the art over the disclosure of Stober et al. The claimed DS of carboxymethyl groups would have been obvious as typical in the art.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-4, 6 and 7 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6, 8, 18 and 20 of copending Application No. 11/018915 in view of Stober et al and Zeuner et al. Although the conflicting claims are not identical, they are not patentably distinct from each other because the copending claims embody paper containing a filler and CMC having the claimed content of quaternary ammonium groups. The claimed structures would have been obvious to one of ordinary skill in the art over the disclosure of Stober

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et al or Zeuner et al. The claimed DS of carboxymethyl groups would have been obvious as typical in the art. Paper comprising the filler would have been an obvious product containing the filler in view of Zeuner et al.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Batelaan et al (6627751 and 6103885), Trzasko et al (5349089), Billmers. et al (4788280), Solarek et al (4731162 and 4703116), Frolich et al (6306255), Brode, II et al (4663159) and STONE et al (3472840) disclose other cationized CMCs used in papermaking.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DENNIS CORDRAY whose telephone number is (571)272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dennis Cordray/
Examiner, Art Unit 1791

/Eric Hug/
Primary Examiner, Art Unit 1791